

### **Amendments to the Claims:**

Please enter the following claim amendments.

### **Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An expandable implantable valve prosthesis comprising:

a support frame supporting one or more leaflets, the support frame having a proximal end and a distal end, each leaflet comprising a biomaterial and including a body having an interior surface and an exterior surface facing a wall of a vascular vessel, wherein the support frame and the one or more leaflets together function as a valve to restrict blood flow in a first direction when implanted in a the vascular vessel;

~~wherein the biomaterial~~ each leaflet is folded over the support frame and attached to itself to form a wall-engaging outer edge of each of the one or more leaflets leaflet and an overhang portion overlapping with an adjacent portion of the exterior surface of one of the one or more leaflets at the distal end of the support frame forming a pocket between the overhang portion and the adjacent portion of the leaflet, ~~the wall-engaging outer edge of each of the one or more leaflets comprising a folded edge of the biomaterial carried by at least a portion of the support frame~~ ~~thereinside~~; and

wherein, each of the one or more leaflets leaflet extend extends inward from the wall-engaging outer edge to form the valve.

2. (Withdrawn) The implantable valve of claim 1, wherein a cross-linking agent provides the attachment of the biomaterial to itself.
3. (Withdrawn) The implantable valve of claim 1, wherein an adhesive provides the attachment of the biomaterial to itself.
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Currently Amended) An implantable valve prosthesis, comprising:

a support frame supporting one or more leaflets, the support frame having a proximal end and a distal end, each leaflet comprising a biomaterial, the one or more leaflets including a body, an inner edge, and an outer edge;

wherein the support frame and the one or more leaflets together function as a valve to restrict blood flow in a first direction when implanted in a vascular vessel;

wherein the outer edge of the ~~biomaterial~~ comprising the one or more leaflets is folded over the support frame forming a folded outer edge with the outer edge or a portion adjacent thereto being attached to the leaflet body at a point of attachment by heat welding, thereby securing the one or more leaflets to the support frame and forming an extended overhang

portion of the one or more leaflets extending beyond the point of attachment at the distal end of the support frame; and

wherein the folded outer edge of the one or more leaflets resiliently engages a wall of the vascular vessel when implanted therein;

wherein a space between and the extended overhang portion of each leaflet and a side of the leaflet body facing the vascular vessel wall forms a pocket traversing a length between the folded outer edge over one leg of the support frame supporting the leaflet body and the folded outer edge over another leg of the support frame supporting the same leaflet body, the pocket running parallel to the leaflet body and opening toward the proximal end of the support frame; and

wherein a surface of the pocket facing the vascular vessel wall contacts the vascular vessel wall such that the pocket is adapted to capture retrograde fluid flow between the valve and the vascular vessel wall.

8. (Cancelled)

9. (Cancelled)

10.(Cancelled)

11.(Withdrawn) An implantable vascular valve, comprising:

a support frame;

one or more leaflets comprised of biomaterial attached to the support frame and configured to function as a valve; and

wherein the biomaterial is wrapped around the support frame and affixed to itself using an adhesive, thereby securing the one or more leaflets to the support frame.

12.(Cancelled)

13.(Cancelled)

14.(Currently Amended)      An expandable implantable valve prosthesis, comprising:

a plurality of leaflets of a biomaterial that include a body portion and an outer edge configured to engage a wall of a vessel, the wall-engaging outer edge further comprising a folded portion of the biomaterial extending along the wall-engaging outer edge and an overhang portion extending beyond the wall-engaging outer edge, the folded portion being formed by the attachment of the biomaterial to itself by a series of heat welds positioned therealong, and the overhang portion ~~being formed as~~ forming a pocket in a space between the overhang portion and the leaflet body portion adapted to capture retrograde fluid flow between the wall-engaging outer edge and the wall of the vessel.

15.(Currently Amended)      The valve prosthesis of claim 14, wherein the wall-engaging outer edge further includes a support frame enclosed by the folded portion of the biomaterial, wherein the support frame resiliently urges the outer edge against the wall of the vessel and includes a proximal end and a distal end where the pocket is positioned.

16.(Previously Presented)      The valve prosthesis of claim 14, wherein the biomaterial comprises a remodelable material.

17.(Previously Presented) The valve prosthesis of claim 16, wherein the remodelable material comprises submucosa.

18.(Currently Amended) A method of manufacturing an implantable valve prosthesis, comprising the steps of:

providing a flexible biomaterial;

providing a support frame comprising one or more struts configured to extend along and resiliently engage a wall of a vessel and carry a wall-engaging outer edge of one or more leaflets when the valve prosthesis is implanted therein, the support frame having a proximal end and a distal end;

placing the flexible biomaterial in a hydrated condition against the support frame such that an overhang portion thereof extends beyond the one or more struts;

folding the overhang portion of the flexible biomaterial over the one or more struts, generally enclosing the one or more struts within the folded overhang portion; and

welding the folded overhang portion back to the flexible biomaterial to form the one or more leaflets and to secure each to the one or more struts enclosed therein such that the folded overhang portion comprises the wall-engaging outer edge of the one or more leaflets and forms a pocket in the space between the overhang portion and the leaflet body at the distal end of the support frame adapted to capture retrograde fluid flow between the wall-engaging outer edge and the wall of the vessel.

- 19.(Previously Presented) The method of claim 18, wherein the folded overhang portion is welded using heat.
- 20.(Previously Presented) The method of claims 18, wherein the folded overhang portion is welded using pressure.
- 21.(Previously Presented) The valve prosthesis of claim 1, wherein the overhang portion further includes a skirt portion.
- 22.(Previously Presented) The valve prosthesis of claim 1, wherein the biomaterial is attached to itself by a fixation comprising a heat weld.
- 23.(Previously Presented) The valve prosthesis of claim 1, wherein the biomaterial is attached to itself by a fixation comprising a pressure weld.
- 24.(Previously Presented) The valve prosthesis of claim 1, wherein the biomaterial comprises a remodelable material.
- 25.(Previously Presented) The valve prosthesis of claim 24, wherein the remodelable material comprises submucosa.
- 26.(Currently Amended) The valve prosthesis of claim 1, wherein the ~~overhang portion forms a pocket attached to an outside edge of the one or more valve leaflets~~ support frame comprises a first leaflet and a second leaflet, wherein the overhang portion overlapping with an adjacent portion of the exterior surface of the first leaflet at the distal end of the support frame forms a first pocket between the overhang portion and the adjacent portion of the first leaflet, wherein the overhang portion overlapping with an adjacent portion of the exterior surface of the second leaflet at the distal end of the support frame forms a second pocket between the overhang portion and the adjacent

portion of the second leaflet, the first and second pockets-pocket being adapted to capture retrograde fluid flow.

27.(Previously Presented) The valve prosthesis of claim 1, wherein the biomaterial is a tissue comprising elastin or an elastin like polypeptide.

28.(Currently Amended) The valve prosthesis of claim 7, wherein the body of the one or more leaflets traverses the support frame from the outer edge to the inner edge, the inner edge of the one or more leaflets defining an opening to ~~restrict~~ regulate blood flow in the first direction through the valve when implanted in the vascular vessel.